20000502.ba v02_n884.bam.20000502

>From ???@??? Tue May 2 08:15:11 2000 -0500
Message-Id: <200005021313.e42DDVx02946@sco.theporch.com>
Date: Tue, 2 May 2000 08:10:40 CDT
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 2884

BOATANCHORS Digest 2884

Topics covered in this issue include:

Message-ID: <003501bfb316$6cebac20$6864e7d0@sandy-s-pentium>
From: "Sandy W5TVW" <ebjr@i-55.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Excess books for trade:
Date: Sun, 30 Apr 2000 21:37:34 -0500
MIME-Version: 1.0
Content-Type: text/plain;
    charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Hello all,
I have some excess "old" books for trade:

"Radio Engineer's Handbook", the classic First Edition, 1943 by
Frederick Emmons Terman. Excellent condition, binding VG.

"Practical Radio Communication" Arthur R. Nilson and
J.L. Hornung, First Edition, 1935. Part of back cover missing
on rear but spine is in good condition. Book itself is complete
and excellent. Fraying around edges of cover front and back.

"Practical Wireless Telegraphy", Elmer E. Bucher. Revised
edition of 1921. Entire book excellent. A classic on arc and
spark.

I am looking for the following:

"C.W. Wireless Telegraphy"- W. H. Eccles

"Thermionic Tubes in Radio Telegraphy & Telephony"- J. S. Taggert

"Elementary Principles of Wireless Telegraphy"- (2 volumes)

R. D. Bangay

"Radio Receiving Tubes" - J. A. Moyer & J. F. Wostrel

"Experimental Wireless Stations"- P. E. Edelman

"High Frequency Apparatus, It's Design, Construction and
Practical Application"-, Thomas S. Curtis

"Design data for Radio Transmitters & Receivers"-,
Milton B. Sleeper

"Principles of Radio Communication", J. H. Morecraft

"Vacuum Tubes in Wireless Communication"- Elmer Bucher

73 to all,

Sandy W5TVW

Message-Id: <4.2.0.58.20000430200254.0097ce90@pop3.concentric.net>
Date: Sun, 30 Apr 2000 20:03:40 -0700
To: Old Tube Radios <boatanchors@theporch.com>
From: Ed Zeranski <ezeran@concentric.net>
Subject: SLO
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Are you going to be at SLO??

Message-ID: <038701bfb31c$efa530e0$223843d8@oemcomputer>
From: "DavidC" <eDoc@netzero.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: New Morrow Boatanchor Pages
Date: Sun, 30 Apr 2000 23:25:42 -0400
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have just completed the initial setup of my Boatanchor pages.

The first in place is for the Morrow line of mostly mobile Ham gear.

Please have a peek! I welcome your constructive feedback and

hope you will find the pictures and information of interest.

http://www.qsl.net/k1yp/BA/ba1.html

- Thanks! & 73, DavidC K1YP in Hudson, FL

From: "Larry L. Ravlin" <sheepdip@continet.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Ranger
Date: Sun, 30 Apr 2000 20:48:17 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit
Message-ID: <20000501034820468.AAC251@falcon.continet.com@his-highness>

Who sent the instructions for changing out R18 in the Ranger a couple of weeks ago?

Larry AA7LR

Mime-Version: 1.0
Date: Mon, 1 May 2000 08:45:32 -0700
Message-ID: <008C85FE.C22034@merisel.com>
From: James.Reid@merisel.com
Subject: Capacitor concern
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

Greetings all,
  I picked up a nice Sprague Tel-Ohmike 16 recently and yesterday I decided to pop open the case and see what's inside. Very nice construction and a robust chassis. There's 3 or 4 electrolytics that were replaced in 1965(according to the date code). There's also 3 AC capacitors of unknown value. The values are obscurred by the clamps and I didn't want to get that involved in disassembly as you'll see why.
  What's bothering me is all three of these AC capacitors are leaking oil around the seal. They are a tubular style like an electrolytic can. I'm guessing this thing was manufactured around late 30's/early 40's. I'm concerned that the oil

may be laiden with PCB's. Obviously when in doubt, treat them like they are.
But my questions are many:
1) Are they more than likely dangerous?
2) If so, what's the correct procedure for removing them and cleaning up the residue?
3) What's the procedure for disposing of them?
4) Are modern day replacements still available? The voltage rating is 220VAC.

Thanks for any info. I believe this may have been discussed some time ago, but I didn't archive any of it.

-Jim N6SVS

Message-ID: <392A357CE6FFD111AC3E00A0C99848B003694D20@hdsmsx31.hd.intel.com>
From: "Shriver, John" <john.shriver@intel.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Capacitor concern
Date: Mon, 1 May 2000 09:05:29 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"

1) No, they are not notably dangerous. PCBs, per-se, are not really very dangerous. (There are violent arguments about how dangerous, to say the least.) Especially in these quantities. The way to make them very dangerous is to burn them, it releases Dioxin, which is really bad stuff. They do accumulate in the food chain, and there are some pretty sick fish in the rivers that GE spilled great amounts of PCBs into.

2) Wipe it up. A solvent that will clean oil will do fine. However, the resulting rags will legally become hazardous waste, as are the leaking caps.

3) Hopefully you have a household hazardous waste procedure where you live. Just put them and the rags in a good plastic bag and bring them there. Label as "assumed PCB". Please don't send them to the landfill (into the water table), or even worse, to an incinerator (Dioxin).

4) Absolutely. Motor run capacitors. There's one in every fridge, in every air conditioner, etc. They fill them with mineral oil these days. They are all labeled "no PCBs", to make it clear that they aren't hazardous waste.

Hey, maybe the place that sells you the new ones will be willing to take the PCB ones in for proper disposal. (It's that way with motor oil.) But probably not, because it would be a substantial expense for them.

> -----Original Message-----
> From: James.Reid@merisel.com [mailto:James.Reid@merisel.com]

> Sent: Monday, May 01, 2000 11:46 AM
> To: Old Tube Radios
> Subject: Capacitor concern
>
>
> Greetings all,
> I picked up a nice Sprague Tel-Ohmike 16 recently and
> yesterday I decided to
> pop open the case and see what's inside. Very nice
> construction and a robust
> chassis. There's 3 or 4 electrolytics that were replaced in
> 1965(according to
> the date code). There's also 3 AC capacitors of unknown
> value. The values are
> obscurred by the clamps and I didn't want to get that
> involved in disassembly as
> you'll see why.
> What's bothering me is all three of these AC capacitors are
> leaking oil around
> the seal. They are a tubular style like an electrolytic can.
> I'm guessing this
> thing was manufactured around late 30's/early 40's. I'm
> concerned that the oil
> may be laiden with PCB's. Obviously when in doubt, treat
> them like they are.
> But my questions are many:
> 1) Are they more than likely dangerous?
> 2) If so, what's the correct procedure for removing them and
> cleaning up the
> residue?
> 3) What's the procedure for disposing of them?
> 4) Are modern day replacements still available? The voltage
> rating is 220VAC.
>
> Thanks for any info. I believe this may have been discussed
> some time ago, but
> I didn't archive any of it.
>
> -Jim N6SVS
>
>

Date: Mon, 1 May 2000 12:06:34 -0400 (EDT)
Message-Id: <200005011606.MAA11907@ecunet.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RANKING COLLECTOR DEMAND
From: JOHN.SEHRING@ecunet.org

To: boatanchors@theporch.com

It's a lot like...

The first computer software you learned, whether for word processing or doing engineering math or whatever.

The color of hair of the first girl or guy you were smitten with as a laddie or lass.

The first car you ever owned.

And of course your first radio.

That tends to drive your list of favorites.

 -John Sehring (Sun, Apr 30, 2000, Custer SD) UCC WB0EQ

Mime-Version: 1.0
Date: Mon, 1 May 2000 08:59:40 -0700
Message-ID: <008C8852.C22034@merisel.com>
From: James.Reid@merisel.com
Subject: Circuit board fabrication
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

Wow, two posts in one day. Somebody stop me!

I have been playing with a product called Press-N-Peel(www.techniks.com) for fabricating circuit boards. It uses laser toner to create a resist. I figured it would be good for some BA projects down the road. I've been having some issues with the product and was wondering if anyone out there has had any experience with it. Also does anyone know the pros/cons when using ferric chloride vs. ammonium persulphate for an etchant? Thanks!

-Jim N6SVS
James.Reid@merisel.com

Message-Id: <200005011615.e41GF1719551@jackatak.theporch.com>
From: listown@jackatak.theporch.com (Mail List Owner)
To: Old Tube Radios <boatanchors@theporch.com>
Subject: ADMINISTRIVIA: Buying and Selling Guidelines
Date: Mon, 1 May 2000 11:15:01 CDT

Gang-

This periodic posting is intended as a gentle nudge and suggestion which should improve the quality of posts to the BoatAnchors list, and maintain our excellent (and high) signal to noise ratio...

The list culture has developed to include "for sale" and "wanted" posts. Originally, all buying and selling traffic was focused on finding parts to complete a restoration. As the list has evolved, there has been an increase in buying and selling activity, which may not be all bad.

There is, however, a real need to observe certain conventions, lest this otherwise benign activity turn into a real disturbance to the real purpose of the list: discussions of radio equipment using vaccuum tubes, including the life and times of the designers and users of such gear.

Please observe these guidelines:

There is never a reason for an auction post or update on the Boatanchors List... comments about gear at auction elsewhere are noise, and those who would care already visit the auction sites, and those who do not frequent the auctions do not want to hear about it... simple policy

1) LIMIT the frequency of for sale postings... once a month is a good starting point

2) DO NOT post endless "xxx is sold" to the entire list... you offered it for sale, and it is not considerate of list resources (which include the time and energy of the other list members) to burden the list with these senseless notices. Use direct email to those who responded, or, if you don't want to answer them personally, just don't use the list to advertise them for sale!

3) AVOID even the mere faint appearance that you are posting items for sale as a regular adjunct to your business dealings. This has become more of a problem lately with some long lists showing up regularly on the main list, or with dealers who appear to be using the list for their personal advertising advantage. Failure to observe these basics *will* result in banishment from the list -- just don't do it! When even a shadow of doubt creeps in, read the "Welcome" message again... it spells it out!

4) DO be considerate of those on the list in your for sale or wanted postings. Keep them short, infrequent, and ONLY include items

specifically appropriate to the list -- NO solid state gear is
obvious, but try to avoid pushing the envelope in any area.

5) LONG lists and estate offerings should be sent to me at:
listown@jackatak.theporch.com
so they may be uploaded to the archives for email, web, or ftp retrieval.

6) We now have a web page up. Go to:
http://www.theporch.com
and follow the "ListProc Web Interface" Link to get registered
and use the web interface, which allows searching of previous
articles and the archived text files.

Thanks for your understanding and help in making the boatanchors list
have the highest signal to noise on the InterNet.
--
73
Jack, W4KH/Mobile - - - BoatAnchor Mailing List Owner - - -
listown@jackatak.theporch.com - "Plus ca change, plus c'est la meme chose"
"Il n'y a que les idiots qui ne changent jamais d'idee"
Mon May 1 11:15:00 CDT 2000

Message-ID: <20000501163151.27894.qmail@mellon.com>
From: Merz Donald S <merz.ds@mellon.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RCA ATR-219
Date: Mon, 1 May 2000 12:27:37 -0400
MIME-Version: 1.0
Content-Type: text/plain

I need a manual photocopy for an RCA ATR-219 transceiver. This is a 1930's
era 5M battery portable transceiver that uses one 19 tube and one other
unknown tube. Probably a modulated oscillator circuit I would guess. Any
help with manual or schematic copy would be appreciated.

73, Don Merz, N3RHT

Message-ID: <000601bfb38b$48362fc0$982f29d8@tneltcds>
From: "Richard Brunner" <rbrunner@gis.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: NTIS Research
Date: Mon, 1 May 2000 12:34:45 -0400
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Can anyone enlighten my ignorance as to how to buy old manuals from the NTIS? I need the manual for a PP-7482/G Frequency Converter, (60 to 400 cycles, 120 v, 1 kva) T.O. 31R2-2G-211. It was made by Collins in the mid to late '70's for the Air Force, and they cannot sell the manual because it was never made for the commercial market. NTIS seems to only list stuff from 1990. My plan is to get it working, bump it up to 600-800 cycles, and run my TBW on it.

TNX
Richard Brunner, AA1P, rbrunner@gis.net

Date: Mon, 1 May 2000 12:49:57 -0400 (EDT)
Message-Id: <200005011649.MAA32322@ecunet.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: DRAKE 2B S-METER TROUBLE
From: JOHN.SEHRING@ecunet.org

To: boatanchors@theporch.com

I've had a Drake R-4A whose S-meter lost its intrinsic mechanical damping. It bounced around like crazy! This was *not* an electronic problem but mechanical. The associated ct. was not at fault.

I never found out exactly what went awry with this moving vane-type meter.

I think a better (D'Arsnoval) meter movement would be fine if you could fit it ok into the Drake case if an original can't be found.

-John Sehring (Sun, Apr 30, 2000, Custer SD) UCC WB0EQ

--MAA13329.957197194/ecunet.org--

*** End of original note ***

-John Sehring (Mon, May 1, 2000, Custer SD) UCC WB0EQ

Message-ID: <390E0FF3.2099A438@atnet.net>
Date: Mon, 01 May 2000 16:14:59 -0700
From: Bob W7AVK <rsrolfne@atnet.net>

MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Parting DX-100
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Have parted out a DX-100. Gone is the cabinet, the modulation iron, and
those little red knobs.

All else is available.

73's Bob W7AVK

Message-ID: <390E228E.6F7B6F8D@home.com>
Date: Mon, 01 May 2000 20:34:22 -0400
From: Sandy Gerli <angerli@home.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Hallicrafters P-2000 help wanted
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi,

My Halli SR-2000 transceiver is missing the back cover for the
P-2000 p/s. That was made from plain old 1/8" Masonite, if the
backplate from my PS-500-A-AC is any indication. Would anyone who
has an intact P-2000 care to allow me to copy his backplate?

I'd take great care to ensure you got it back without a scratch.

I'd appreciate any offers of assistance.

73,

--
Sandy Gerli, AC1Y
500 Country Club Road
Avon, CT 06001-2406
(860) 675-5566
E-Mail: angerli@home.com

Life Member: ARRL, QCWA
Collins Collectors Association
Hallicrafters Collectors Association
Intrepid Heathkit Aficionado

Boatanchors are Ham Radio's living heritage!
Restore something! Smell that hot solder!
Better 'n booze...
And, you can get up afterwards if you stay away from the B+!!
Keep your finals dipped, now...

Message-ID: <003601bfb3d4$8b0284e0$02c66ac6@oemcomputer>
From: "Hue Miller" <kargokult@proaxis.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: SLO
Date: Mon, 1 May 2000 18:19:58 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

If you mean me, Hue Miller, no.
I haven't managed to drag anything out of
storage, and i probably wouldn't go for
any other reason.
Hue

Date: Mon, 01 May 2000 21:16:07 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Re: Capacitor concern
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <0FTX0099Y00AFE@mta5.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Hi Jim;

I know someone will want to give me hell for this so I suggest they don't waste my time even though it takes only 200 mS to hit the delete key. Your fear of PCB intoxication is unfounded. You could lick the oily stuff from the caps off of your fingers with no noticeable harm although if you ingest enough of the goo you might want to consult your poison control center to put your mind at ease. Don't make it a habit though.

With regard to dioxins, the environment is laced with naturally occuring dioxins as well as what our friendly polluters contribute. If you had a sample of your body tissue analyzed dioxins would be found. From what the pundits are saying nowadays there is no statistical basis for concern from environmental dioxins.

If you threw your caps in the regular trash no one would notice or care. If every BA cap that had PCB's were tossed into the landfills across the country the microorganisms that coexist with environmental polution would barely notice. Likewise, if you burned the capacitors in your fireplace the heavens would not fall.

But here is what I recommend: Do as John suggests and turn the caps into your local hazardous waste disposal center along with those paint buckets, car batteries and used radiator coolent. Be a good environmental citizen and set a good example for the upcoming generation of technology lovers.

BTW, I am in no way qualified to make the above remarks. I just made them anyway.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

Date: Mon, 1 May 2000 23:36:04 -0500 (CDT)
From: Don Reaves <dr@cei.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Scott SLRM
Message-ID: <Pine.LNX.4.10.10005012329520.13133-100000@wa5bbs.radiohome.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

After a visit by listmember William Donzelli last month, he has a new battleship power supply and I have a Scott SLRM receiver. This one is in very nice condition with an aluminum case. Now, I've never liked AC/DC radios, but this one may be a keeper.

Where can I find a manual?

William, I hope you made it home via Houston OK.

Don
WA5BBS

To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Date: Tue, 2 May 2000 01:09:26 -0500
Subject: Re: Capacitor concern
Message-ID: <20000502.014501.-1014627.16.jackiv@juno.com>
MIME-Version: 1.0
Content-Type: text/plain
Content-Transfer-Encoding: 7bit
From: JACK IVERSON <jackiv@juno.com>

About PCBs in capacitors- the odor is very distinctive, if one remembers the unique odor of the old original NCR carbonless paper forms, you have smelled a PCB compound.
  even a well sealed paper cap in a metal enclosure will have the smell, have to bring it up close to nose, make sure it is discharged!
          73 jack
JACK IVERSON
K0EWU
jackiv@juno.com

Message-ID: <01cb01bfb40b$242e0960$801699c2@midshires>
From: "Andrew Emmerson" <midshires@cix.co.uk>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: <boatanchors@theporch.com>
Subject: Re: Capacitor concern
Date: Tue, 2 May 2000 08:05:33 +0100
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

This is an old chestnut, I feel. We have thrashed out this PCBs business in vintage radio and television circles here in Britain and the conclusion we came to is that PCBs have never, ever, ever been used in consumer (or normal military) radio equipment.

Certainly there are oily capacitors around, some of which do indeed leak, BUT they don't contain PCBs. There would be no reason to, and I suspect that PCB oil would have been too expensive (i.e. overkill) for this application.

Prove me wrong by all means but this is the considered opinion of well-informed people.

73,
Andy G8PTH.

Message-ID: <00c001bfb421$2d749a00$541699c2@midshires>
From: "Andrew Emmerson" <midshires@cix.co.uk>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Boatanchor list" <boatanchors@theporch.com>,
   <AV-Media-Matters@topica.com>
Subject: Why 19 inch?
Date: Tue, 2 May 2000 11:24:08 +0100
MIME-Version: 1.0
Content-Type: text/plain;

charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

It's a serious question and one that I cannot answer. The question is: when was the standard for rack-mounted equipment introduced and why was it 19" wide and in units of 1 3/4" tall?

The earliest documented record I have encountered is a description of telephone repeater station equipment dated 1919 (IPOEE Journal). The chances are that this came from Western Electric Ltd, which would indicate that 19" was a Western Electric (and perhaps Bell System) standard.

But does anyone have chapter and verse?

Incidentally, the old chestnut linking it to the width of jackfields on manual telephone swithcboards doesn't have much credibility. For a start, they are not built on 19" frames.

Andy Emmerson.

Message-Id: <3.0.32.20000502062522.007caeb0@mail.wt.net>
Date: Tue, 02 May 2000 06:38:13 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "Benjamin D. Hall" <kd5byb@WT.NET>
Subject: RME VHF 2-11
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Greetings all...

UPS delivered me an RME VHF 2-11 the other day. It looks to be in nice restorable shape.

However, in doing my pre-flight checks, I noticed several tubes in sockets that disagreed with my manual. However, knowing how RME often changed things mid-production, I'd like to get a hold of another RME VHF 2-11 owner before I change the tubes to agree with my manual...

thanks and 73,
ben

Benjamin D. Hall, KD5BYB, Engine and radio collector / operator.
Located in Houston, Texas, USA.
e-mail: kd5byb@WT.net, web: http://web.wt.net/~kd5byb/
"An ye harm none, do what thou wilt."

Message-ID: <392A357CE6FFD111AC3E00A0C99848B003694D29@hdsmsx31.hd.intel.com>
From: "Shriver, John" <john.shriver@intel.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Capacitor concern
Date: Tue, 2 May 2000 05:41:35 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"

If the cap is labeled "Pyranol", that's General Electric's brand name for
PCB oil. I certainly have some caps so labeled. But they're not leaking...

Came out of military gear.

> -----Original Message-----
> From: Andrew Emmerson [mailto:midshires@cix.co.uk]
> Sent: Tuesday, May 02, 2000 3:06 AM
> To: Old Tube Radios
> Cc: boatanchors@theporch.com
> Subject: Re: Capacitor concern
>
> Certainly there are oily capacitors around, some of which do
> indeed leak,
> BUT they don't contain PCBs. There would be no reason to, and
> I suspect that
> PCB oil would have been too expensive (i.e. overkill) for
> this application.
>
> 73,
> Andy G8PTH.
>
>

Message-ID: <392A357CE6FFD111AC3E00A0C99848B003694D2A@hdsmsx31.hd.intel.com>
From: "Shriver, John" <john.shriver@intel.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Why 19 inch?
Date: Tue, 2 May 2000 05:50:23 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"

I would suggest having a look at "History of Science and Engineering in the
Bell System", which is a multi-volume set published by AT&T in the
mid-1970's. It could well be discussed there somewhere. Should be widely
available via inter-library loan.

Actually, these days 23" wide racks are far more common in Telco use.

I suspect that the 1-3/4" height has to do with how tightly they could pack the relays they made. A row of B or U relays is a reasonably cosy fit on a 1-3/4" panel. (The AJ and AK wire-spring relays of the 1950's are a exceedingly snug fit on a 1-3/4" panel, the rack mount for them needs flanged sides for strength.)

Relays became a part of the phone system when they went from magneto phones to common battery, where there was a relay per line. (This is all pre-dial!)

There's a reason they call them "relay racks".

The Bell System was NEVER averse to using odd dimensions, or using strange threads, or tricky designs, if it offered them some efficiency. Want to guess how much money they saved in central office floor space by having 1-3/4" rack panels instead of 2" panels? Any small efficiency (12.5% in this case) multiplied by the huge scale of "the phone company" [R.I.P.] meant a lot of money saved.

Message-ID: <003a01bfb436$fe5ffb40$2b3029d8@tneltcds>
From: "Richard Brunner" <rbrunner@gis.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Capacitor Question
Date: Tue, 2 May 2000 09:04:00 -0400
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

PCB's, more correctly known as Askarels, are indeed way overblown as a hazard. When I was young and ignorant, instead of middle-aged, I worked one summer in a factory assembling distribution transformers, and occasionally I would get an Askarel job to assemble. It is a straw-colored liquid and has a pungent odor, unlike transformer oil, and clears your sinuses. If you don't ingest large quantities or pour it into an open wound, it will not bother you. It is also much less common than people think. Its reason for invention is because it will not burn, and was used in transformers in hazardous locations and in buildings and mines., etc. It was also significantly more expensive than transformer oil and was not used frivolously. Its dielectric characteristics are close to oil, but not exactly, and give no advantage over oil. Power companies used the same pumping equipment to pump oil and Askarels, so there has been cross-contamination with some large oil-filled transformers, but in parts-per-million, etc. Askarel is not very high on my worry list. It is also an excellent solvent; no glue, binder, film-insulated wire, or paint

could be used in inside an Askarel transformer.

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